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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	09/993,342
				Filing Date	November 05, 2001
				First Named Inventor	BLACKBURN, et al.
				Group Art Unit	1744
				Examiner Name	Not Yet Assigned
				Attorney Docket Number	A-68718-4/RFT/RMS/RMK
Sheet	1	of	15		

PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
JDR	1	4,704,193		Bowers et al.	11/1987	
	2	4,707,352		Stavrianopoulos	11/1987	
	3	4,707,440		Stavrianopoulos	11/1987	
	4	4,711,955		Ward et al.	12/1987	
	5	4,755,458		Rabbani et al.	7/1988	
	6	4,787,963		MacConnell	11/1988	
	7	4,840,893		Hill et al.	6/1989	
	8	4,849,513		Smith et al.	7/1989	
	9	4,868,103		Stavrianopoulos et al.	9/1989	
	10	4,894,325		Englehardt et al.	1/1990	
	11	4,882,013		Turner et al.	11/1989	
	12	4,943,523		Stavrianopoulos	7/1990	
	13	4,945,045		Forrest et al.	07/1990	
	14	4,952,685		Stavrianopoulos	8/1990	
	15	4,964,972		Sagiv et al.	10/1990	
	16	4,994,373		Stavrianopoulos	2/1991	
	17	5,849,486		Heller et al.	12/1998	
	18	5,837,859		Teoule et al.	11/1998	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)				
	19	EP	0 234 938	A2	Cranfield Inst. of Tech.	2/1987		
	20	EP	0 229 943	B1	Molecular Biosystems Inc.	7/1987		
	21	EP	0 599 337	A2	Canon Kabushiki Kaisha	1/1994		
	22	EP	0 063 879	A2	Yale University	11/1982		
	23	EP	0 515 615		Boehringer Mannheim	9/1996		
	24	CA	2 090 904	A1	F. Hoffman-La Roche	9/1993		
	25	JP	238,166	A	Mitsubishi Corp.	1988	abstract	
	26	JP	6-41183	A2	Mitsubishi Corp.	1994		

Examiner Signature	David Reilly	Date Considered	3/18/04
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STATEMENT BY APPLICANT**

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Sheet 2 of 15

**Complete if Known**

Application Number	09/993,342
Filing Date	November 05, 2001
First Named Inventor	BLACKBURN, et al.
Group Art Unit	1744
Examiner Name	Not Yet Assigned
Attorney Docket Number	A-68718-4/RFT/RMS/RMK

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DAZ	27	5,002,885		Stavrianopoulos	3/1991	
	28	5,013,831		Stavrianopoulos	5/1991	
	29	5,066,372		Weetall	11/1991	
	30	5,082,830		Brakel et al.	1/1992	
	31	5,089,112		Skotheim et al.	02/1992	
	32	5,156,810		Ribi	10/1992	
	33	5,175,269		Stavrianopoulos	12/1992	
	34	5,180,968		Bruckenstein et al.	01/1993	
	35	5,241,060		Englehardt et al.	8/1993	
	36	5,242,828		Bergstrom et al.	09/1993	
	37	5,278,043		Bannwarth et al.	1/1995	
	38	5,312,527		Mikkelsen et al.	5/1994	
	39	5,328,824		Ward et al.	7/1994	
	40	5,356,786		Heller et al.	10/1994	
	41	5,391,272		O'Daly et al.	02/1995	
	42	5,403,451		Riviello et al.	4/1995	
	43	5,436,161		Bergstrom et al.	07/1995	
	44	5,443,701		Willner et al.	08/1995	
	45	5,571,568		Ribi et al.	11/1996	
DAZ	46	5,632,957		Heller et al.	05/1997	

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		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)				
DAZ	47	WO	90/05732	A1	Columbia Univ.	5/1990		
	48	WO	92/10757	A1	Boehringer Mannheim	6/1992		
	49	WO	93/10267	A1	IGEN, Inc.	5/1993		
	50	WO	94/22889	A1	Cis Bio International	10/1994		
	51	WO	95/15971	A2	Calif. Inst. of Technology	6/1995		
DAZ	52	WO	96/40712	A1	Calif. Inst. of Technology	12/1996		

Examiner Signature	<i>David Reddy</i>	Date Considered	3/18/04
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Sheet 3 of 15

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		Number	Kind Code <sup>2</sup> (if known)			
DAZ	53	5,705,346		Okamoto et al.	01/1998	
	54	5,705,348		Meade et al.	1/1998	
	55	5,741,700		Ershov et al.	4/1998	
	56	5,756,050		Ershov et al.	5/1998	
	57	5,770,369		Meade et al.	6/1998	
	58	5,770,721		Ershov et al.	6/1998	
	59	5,776,672		Hashimoto et al.	7/1998	
	60	5,700,667		Marble et al.	12/1997	
	61	5,780,234		Meade et al.	7/1998	
	62	5,601,982		Sargent et al.	2/1997	
	63	5,620,850		Bamdad et al.	4/1997	
	64	5,622,821		Selvin et al.	04/1997	
DAZ	65	5,650,061		Kuhr et al.	07/1997	

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		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)				
DAZ	66	WO	97/01646	A2	Univ. of N. Carolina	1/1997		
	67	WO	97/44651	A1	AU Membrane and	11/1997		
	68	WO	97/27329	A1	Univ. of Chicago	7/1997		
	69	WO	98/20162	A2	Clinical Micro Systems	5/1998		
	70	WO	98/27229	A1	Univ. of Chicago	6/1998		
	71	WO	98/28444	A2	Univ. of Chicago	7/1998		
	72	WO	98/35232	A2	Univ. of N. Carolina	8/1998		
	73	WO	98/57159	A1	Clinical Micro Systems	6/1997		
	74	WO	99/67425	A2	Clinical Micro Systems	12/1999		
	75	WO	99/14596	A1	AB Sangtec Medical	3/1999		
DAZ	76	EP	0668502	B1	Yissum Research Dev.	05/2002		
Examiner Signature	Daniel Reddy				Date Considered	3/18/04		

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Application Number	09/993,342
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First Named Inventor	BLACKBURN, et al.
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Attorney Docket Number	A-68718-4/RFT/RMS/RMK

4 of 15

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		Number	Kind Code <sup>2</sup> (if known)			
me	77	5,824,473		Meade et al.	10/1998	
	78	5,851,772		Mirzabekov et al.	12/1998	
	79	5,952,172		Meade et al.	9/1999	
	80	5,976,802		Ansorge et al.	11/1999	
	81	6,090,933		Kayyem et al.	07/2000	
	82	6,153,737		Manoharan et al.	11/2000	
	83	6,180,352	B1	Meade et al.	01/2001	
	84	6,238,870	B1	Meade et al.	05/2001	
	85	6,200,761	B1	Meade et al.	03/2001	
	86	6,096,273		Kayyem et al.	08/2000	
	87	6,107,080		Lennox et al.	08/2000	
	88	5,795,453		Gilmartin	08/1998	
	89	6,060,023		Maracas	05/2000	
	90	6,060,327		Keen	05/2000	
	91	6,071,699		Meade et al.	06/2000	
me	92	6,087,100		Meade et al.	07/2000	

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		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)				
me	93	WO	97/41425	A1	Pence Inc.	11/1997		
	94	WO	99/37819	A2	Clinical Micro Systems	07/1999		
	95	WO	86/05815	A1	Genetics International	03/1985		
	96	WO	93/22678	A3	MIT	11/1993		
	97	WO	97/31256	A3	Cornell Research	08/1997		
	98	WO	98/51823	A1	Mosaic Technology	11/1998		
	99	WO	99/57319	A1	Clinical Micro Systems	11/1999		
me	100	WO	99/29711	A1	Nanogen Inc.	06/1999		

Examiner  
Signature

David R. Ruff

Date  
Considered

3/18/04

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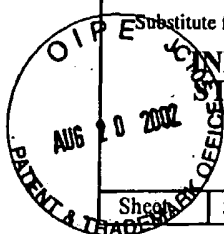
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<i>DR</i>	101	6,177,250	B1	Meade et al.	01/2001	
	102	6,096,825		Garnier	08/2000	
	103	6,197,515	B1	Bamdad et al.	03/2001	
	104	6,203,758	B1	Marks et al.	03/2001	
	105	6,207,369	B1	Wohlstadter et al.	03/2001	
	106	6,221,583	B1	Kayyem et al.	04/2001	
	107	6,232,062	B1	Kayyem et al.	05/2001	
	108	6,258,545	B1	Meade et al.	07/2001	
	109	6,268,149	B1	Meade et al.	07/2001	
	110	6,268,150	B1	Meade et al.	07/2001	
	111	6,277,576	B1	Meade et al.	08/2001	
	112	6,300,141	B1	Segal	10/2001	
	113	6,306,584	B1	Bamdad et al.	10/2001	
	114	6,322,979	B1	Bamdad et al.	11/2001	
	115	20010034033	A1	Meade et al.	10/2001	
<i>DR</i>	116	20010046679	A1	Meade et al.	11/2001	

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<i>DR</i>	117	WO	90/05303	A1	Pharmacia AB	05/1990		
	118	WO	97/46568	A1	California Institute of	12/1997		
	119	WO	98/04740	A1	North Western University	02/1998		
	120	WO	98/12539	A1	Meso Scale Technologies	03/1998		
	121	WO	98/57158		Clinical Micro Sensors	12/1998		
<i>DR</i>	122	WO	99/57317		Clinical Micro Sensors	11/1999		

Examiner Signature <i>David Reddy</i>	Date Considered <i>3/18/04</i>
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<i>Jan</i>	123	5,552,270		Khrapko et al.	9/1996	
	124	5,565,552		Magda et al.	10/1996	
	125	5,573,906		Bannwarth et al.	11/1996	
	126	5,591,578		Meade et al.	1/1997	
	127	5,595,908		Fawcett et al.	1/1997	
	128	5,449,767		Ward et al.	9/1995	
	129	5,472,881		Beebe et al.	12/1995	
	130	5,476,928		Ward et al.	12/1995	
	131	5,491,097		Ribi et al.	02/1996	
	132	5,519,635		Miyake et al.	05/1996	
	133	5,741,462		Nova et al.	04/1998	
	134	5,866,345		Wilding et al.	02/1999	
	135	6,114,122		Besemer et al.	09/2000	
	136	5,064,618		Baker et al.	11/1991	
	137	5,727,548		Hill et al.	03/1998	
	138	5,505,321		Caron et al.	04/1996	
	139	5,728,532		Ackley	03/1998	
<i>Jan</i>	140	5,694,932		Michel	12/1997	

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<i>Jan</i>	141	WO	00/62931	A1	Clinical Micro Sensors	10/2000		
	142	WO	98/05424	A1	Caliper Technologies	02/1998		
	143	WO	99/33559	A1	Cepheid	07/1999		
<i>Jan</i>	144	WO	98/31839	A2	President and Fellows of Harvard College	07/1998		

Examiner Signature

*David Reddy*

Date Considered

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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7 of 15

Complete if Known	
Application Number	09/993,342
Filing Date	November 05, 2001
First Named Inventor	BLACKBURN, et al.
Group Art Unit	1744
Examiner Name	Not Yet Assigned
Attorney Docket Number	A-68718-4/RFT/RMS/RMK

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<i>DM</i>	145	Aizawa et al., AIntegrated Molecular Systems for Biosensors," Sensors and Actuators (Nos 1/3) Part 1:1-5 (March 1995).	
<i>DM</i>	146	Albers et al., ADesign of Novel Molecular Wires for Realizing Long-Distance Electron Transfer," Biochemistry and Bioenergetics, 42:25-33 (1997).	
<i>DM</i>	147	Alleman, K.S., et al., AElectrochemical Rectification at a Monolayer-Modified Electrode," <i>J. Phys. Chem.</i> , 100:17050-17058 (1996).	
<i>DM</i>	148	Arkin et al. "Evidence for Photoelectron Transfer Through DNA Intercalation," <i>J. Inorganic Biochem. Abstracts</i> , 6th International Conference on Bioinorganic Chemistry, 51(1) & (2):526 (1993).	
<i>DM</i>	149	Barisci et al., "Conducting Polymer Sensors," <i>TRIP</i> , 4(9):307-311 (1996).	
<i>DM</i>	150	Baum, R. M., "Views on Biological, Long-Range Electron Transfer Stir Debate," <i>C&amp;EN</i> , pp 20-23 (1993).	
<i>DM</i>	151	Bechtold, R., et al., "Ruthenium-Modified Horse Heart Cytochrome c: Effect of pH and Ligation on the Rate of Intramolecular Electron Transfer between Ruthenium(II) and Heme(III)," <i>J. Phys. Chem.</i> , 90(16):3800-3804 (1986).	
<i>DM</i>	152	Bidan, "Electroconducting conjugated polymers: new sensitive matrices to build up chemical or electrochemical sensors. A Review.," <i>Sensors and Actuators</i> , B6:45-56 (1992).	
<i>DM</i>	153	Biotechnology and Genetics: Genetic Screening Integrated Circuit," <i>The Economist</i> (February 25-March 3, 1995).	
<i>DM</i>	154	Blonder et al., AThree-dimensional Redox-Active layered Composites of Au-Au, Ag-Ag and Au-Ag Colloids," <i>Chem. Commun.</i> 1393-1394 (1998).	
<i>DM</i>	155	Boguslavsky, L. et al., "Applications of redox polymers in biosensors," <i>Solid State Ionics</i> , 60:189-197 (1993).	
<i>DM</i>	156	Bowler, B. E., et al., "Long-Range Electron Transfer in Donor (Spacer) Acceptor Molecules and Proteins," <i>Progress in Inorganic Chemistry: Bioinorganic Chemistry</i> , 38:259-322 (1990).	
<i>DM</i>	157	Brun, A. M., et al., "Photochemistry of Intercalated Quaternary Diazaaromatic Salts," <i>J. Am. Chem. Soc.</i> , 113:8153-8159 (1991).	
<i>DM</i>	158	Bumm, et al., "Are Single Molecular Wires Conducting?," <i>Science</i> 271:1705-1707 (1996).	
<i>DM</i>	159	Cantor, C.R. et al., "Report on the Sequencing by Hybridization Workshop," <i>Genomics</i> , 13:1378-1383 (1992).	
<i>DM</i>	160	Carr et al., ANovel Electrochemical Sensors for Neutral Molecules," <i>Chem. Commun.</i> , 1649-1650 (1997).	
<i>DM</i>	161	Carter et al., AVoltammetric Studies of the Interaction of Metal Chelates with DNA. 2. Tris-Chelated Complexes of Cobalt(III) and Iron(II) with 10-Phenanthroline and 2,2'-Bipyridine," <i>J. Am. Chem. Soc.</i> , 111:8901-8911 (1989).	
Examiner Signature	<i>David Reddy</i>		Date Considered 3/17/04

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		First Named Inventor	BLACKBURN, et al.
		Group Art Unit	1744
		Examiner Name	Not Yet Assigned
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Sheet	8	of	15

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DM	162	Chang, I-Jy, et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocycytochrome c by Ru(2,2'-bpy) <sub>2</sub> (im)(His-33)", <i>J. Am. Chem. Soc.</i> , 113:7056-7057 (1991).	
DM	163	Chidsey, et al., "Coadsorption of Ferrocene-Terminated and Unsubstituted Alkanethiols on Gold" Electroactive Self-Assembled Monolayers," <i>J. Am. Chem. Soc.</i> , 112:4301-4306 (1990).	
DM	164	Chidsey, C.E.D., et al., "Free Energy and Temperature Dependence of Electron Transfer at the Metal Electrolyte Interface," <i>Science</i> , 251:919-922 (1991).	
DM	165	Chrisey, et al., "Covalent attachment of synthetic DNA to self-assembled monolayer films," <i>Nucleic Acids Research</i> , 24(15):3031-3039 (1996).	
DM	166	Clery, ADNA Goes Electric," <i>Science</i> , 267:1270 (1995).	
DM	167	<i>Commerce Business Daily Issue</i> of September 26, 1996 PSA#1688.	
DM	168	Davis, L. M., et al., "Electron Donor Properties of the Antitumour Drug Amsacrine as Studied by Fluorescence Quenching of DNA-Bound	
DM	169	Davis, L. M., et al., "Elements of biosensor construction," <i>Enzyme Microb. Technol.</i> 17:1030-1035 (1995).	
DM	170	Degani et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 2. Methods for Bonding Electron-Transfer Relays to Glucose Oxidase and D-Amino-Acid Oxidase," <i>J. Am. Chem. Soc.</i> 110:2615-2620 (1988).	
DM	171	Degani, Y., et al., "Electrical Communication between Redox Centers of Glucose Oxidase and Electrodes via Electrostatically and Covalently Bound Redox Polymers," <i>J. Am. Chem. Soc.</i> , 111:2357-2358 (1989).	
DM	172	Degani, Y., et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 1. Electron Transfer from Glucose Oxidase to Metal Electrodes via Electron Relays, Bound Covalently to the Enzyme," <i>J. Phys. Chem.</i> , 91(6):1285-1288 (1987).	
DM	173	Deinhammer, R.S., et al., "Electronchemical Oxidation of Amine-containing compounds: A Route to the Surface Modification of glassy carbon electrodes," <i>Langmuir</i> , 10:1306-1313 (1994).	
DM	(174)	Dreyer, G. B., et al., "Sequence-specific cleavage of single-stranded DNA: Oligodeoxynucleotide-EDTA□Fe(II)," <i>Proc. Natl. Acad. Sci. USA</i> , 82:968-972 (1985).	
DM	(175)	Drobyshev, A. et al., ASequence Analysis by Hybridization with Oligonucleotide Microchip: Identification of β-thalassemia Mutations," <i>Gene</i> , 188:45-52 (1997).	
DM	(176)	Dubiley, S. et al., AFractionation, phosphorylation and Ligation on Oligonucleotide Microchips to Enhance Sequencing by Hybridization," <i>Nucleic Acids Research</i> , 25(12):2259-2265 (1997).	
DM	177	Durham, B., et al., "Electron-Transfer Kinetics of Singly Labeled Ruthenium(II) Polypyridine Cytochrome c Derivatives," <i>Advances in Chemistry Series</i> , 226:181-193 (1990).	

Examiner Signature	<i>Paul R. Kelly</i>	Date Considered	3/17/04
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		Group Art Unit	1744
		Examiner Name	Not Yet Assigned
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DM	178	Durham, B., et al., "Photoinduced Electron-Transfer Kinetics of Singly Labeled Ruthenium Bis(bipyridin) Dicarboxybipyridine Cytochrome c Derivatives," <i>Biochemistry</i> , 28:8659-8665 (1989).	
DM	179	Elghanian et al., A Selective Colorimetric Detection of Polynucleotides Based on the Distance-Dependent Optical Properties of Gold Nanoparticles," <i>Science</i> , 277:1078-1081 (1997).	
DM	180	Elias, H., et al., "Electron-Transfer Kinetics of Zn-Substituted Cytochrome c and Its Ru(NH <sub>3</sub> ) <sub>6</sub> (Histidine-33) Derivative," <i>J. Am. Chem. Soc.</i> , 110:429-434 (1988).	
DM	181	Farver, O., et al., "Long-range intramolecular electron transfer in azurins," <i>Proc. Natl. Acad. Sci. USA</i> , 86:6968-6972 (1989).	
DM	182	Fotin, A. et al., A Parallel Thermodynamic Analysis of Duplexes on Oligodeoxyribonucleotide Microchips," <i>Nucleic Acids Research</i> , 216(6):1515-1521 (1998).	
DM	183	Fox, M. A., et al., "Light-Harvesting Polymer Systems," <i>C&amp;EN</i> , pages 38-48 (March 15, 1993).	
DM	184	Fox, L. S., et al., "Gaussian Free-Energy Dependence of Electron-Transfer Rates in Iridium Complexes," <i>Science</i> , 247:1069-1071 (1990).	
DM	185	Francois, J-C., et al., "Periodic Cleavage of Poly(dA) by Oligothymidylates Covalently Linked to the 1,10-Phenanthroline-Copper Complex," <i>Biochemistry</i> , 27:2272-2276 (1988).	
DM	186	Friedman, A. E., et al., "Molecular 'Light Switch' for DNA: Ru(bpy) <sub>3</sub> (dppz) <sup>2+</sup> ," <i>J. Am. Chem. Soc.</i> , 112:4960-4962 (1990).	
DM	187	Fromherz, P., et al., "Photoinduced Electron Transfer in DNA Matrix from Intercalated Ethidium to Condensed Methylviologen," <i>J. Am. Chem. Soc.</i> , 108:5361-5362 (1986).	
DM	188	Gardner, et al., "Application of conducting polymer technology in microsystems," <i>Sensors and Actuators</i> , A51:57-66 (1995).	
DM	189	Gregg, B. A., et al., "Redox Polymer Films Containing Enzymes. 1. A Redox-Conducting Epoxy Cement: Synthesis, Characterization, and Electrocatalytic Oxidation of Hydroquinone," <i>J. Phys. Chem.</i> , 95:5970-5975 (1991).	
DM	190	Gregg, B. A., et al., "Cross-linked redox gels containing glucose oxidase for amperometric biosensor applications," <i>Anal. Chem.</i> , 62:258-263 (1990).	
DM	(191)	Guschin, D. et al., A Manual Manufacturing of Oligonucleotide, DNA, and Protein Microchips," <i>Analytical Biochemistry</i> , 250:203-211 (1997).	
DM	(192)	Guschin, D. et al., A Oligonucleotide Microchips as Genosensors for Determinative and Environmental Studies in Microbiology," 63(6):2397-2402 (1997).	
DM	(193)	Hashimoto, et al., "Sequence-Specific Gene Detection with a Gold Electrode Modified with DNA Probes and an Electrochemically Active Dye," <i>Anal. Chem.</i> 66:3830-3833 (1994).	
DM	194	Hegner, et al., "Immobilizing DNA on gold via thiol modification for atomic force microscopy imaging in buffer solutions," <i>FEBS</i> 336(3):452-456 (1993).	

Examiner Signature	<i>David R. Kelly</i>	Date Considered	3/17/04
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Sheet 10 of 15

## Complete if Known

Application Number	09/993,342
Filing Date	November 05, 2001
First Named Inventor	BLACKBURN, GROUP
Group Art Unit	1744
Examiner Name	Not Yet Assigned
Attorney Docket Number	A-68718-4/RFT/RMS/RMK

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DM	195	Heller, A.; "Electrical Wiring of Redox Enzymes," <i>Acc. Chem. Res.</i> , 23:128-134 (1990).	
DM	196	Heller et al., "AFluorescent Energy Transfer Oligonucleotide Probes," <i>Fed. Proc.</i> 46(6):1968 (1987) Abstract No. 248.	
DM	197	Heller, A., et al., "Amperometric biosensors based on three-dimensional hydrogel-forming epoxy networks," <i>Sensors and Actuators</i> , 13-14:180-183 (1993).	
DM	198	Ho ADNA-Mediated Electron Transfer and Application to >Biochip=Development," <i>Abstract. Office of Naval Research</i> (Report Date: July 25, 1991) 1-4, RR04106.	
DM	199	Hobbs et al., "APolynucleotides Containing 2'-Amino-2'-deoxyribose and 2'-Azido-2'-deoxyribose," <i>Biochemistry</i> , 12(25):5138-5145 (1973).	
DM	200	Hsung, et al., "Thiophenol Protecting Groups for the Palladium-Catalyzed Heck Reaction: Efficient Syntheses of Conjugated Arylthiols," <i>Tetrahedron Letters</i> . 36(26):4525-4528 (1995).	
DM	201	Hsung, et al., "Synthesis and Characterization of Unsymmetric Ferrocene-Terminated Phenylethynyl Oligomers," <i>Organometallics</i> , 14:4808-4815 (1995).	
DM	202	Jenkins et al., "AA Sequence-Specific Molecular Light Switch: Tebhering of an Oligonucleotide to a Dipyridophenazine Complex of Ruthenium (II), <i>J. Am. Chem. Soc.</i> , 114:8736-8738 (1992).	
DM	203	Johnston et al., "ATrans-Dioxorhenium(V)-Mediated Electrocatalytic Oxidation of DNA at Indium Tin-Oxide Electrodes: Voltammetric Detection of DNA Cleavage in Solution," <i>Inorg. Chem.</i> , 33:6388-6390 (1994).	
DM	204	Kamat et al., <i>J. Phys. chem.</i> , 93(4):1405-1409 (1989).	
DM	205	Katritzky, et al., "Pyridylethylation - A New Protection Method for Active Hydrogen Compounds," <i>Tetrahedron Letters</i> , 25(12):1223-1226 (1984).	
DM	206	Kelley, S.O. and J.K. Barton, "Electrochemistry of Methylene Blue Bound to a DNA-Modified Electrode," <i>Bioconjugate Chem.</i> , 8:31-37 (1997).	
DM	207	Kojima et al., "AA DNA Probe of Ruthenium Bipyridine Complex Using Photocatalytic Activity," <i>Chemistry Letter</i> , pp 1889-1982 (1989).	
DM	208	Korri-Youssoufi et al., "AToward Bioelectronics: Specific DNA Recognition Based on an Oligonucleotide-Functionalized Polypyrrole," <i>J. Am. Chem. Soc.</i> , 119(31):7388-7389 (1997).	
DM	209	Laviron, E., "AA.C. Polarography and Faradaic Impedance of Strongly Adsorbed Electroactive Species. Part I: Theoretical and Experimental Study of a Quasi-Reversible Reaction in the Case of a Langmuir Isotherm," <i>J. Electroanal. Chem.</i> , 97:135-149 (1979).	
DM	210	Laviron, E., "AA.C. Polarography and Faradaic Impedance of Strongly Adsorbed Electroactive Species. Part III: Theoretical Complex Plane Analysis for a Surface Redox Reaction," <i>J. Electroanal. Chem.</i> , 105:35-42 (1979).	
DM	211	Lee, et al., "Direct Measurement of the Forces Between Complementary Strands of DNA," <i>Science</i> , 266:771-773 (1994).	
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<i>SPR</i>	212	Lenhard, J.R., et al., "Part VII Covalent Bonding of a Reversible- Electrode Reactant to Pt Electrodes Using an organosilane Reagent" <i>J. Electronal. Chem.</i> , 78:195-201 (1977).	
<i>SPR</i>	213	Lincoln et al., AShorting Circuiting the Molecular Wire," <i>J. Am. Chem. Soc.</i> , 119(6)1454-1455 (1997).	
<i>SPR</i>	214	Lipkin AIdentifying DNA by the Speed of Electrons," <i>Science News</i> , 147(8):117 ( 1995).	
<i>SPR</i>	215	Livshits, M. et al., ATheoretical Analysis of the Kinetics of DNA Hybridization with Gel-Immobilized Oligonucleotides," <i>Biophysical Journal</i> , 71:2795-2801 (1996).	
<i>SPR</i>	216	Maskos, et al., "Oligonucleotide hybridisations on glass supports: a novel linker for oligonucleotide synthesis and hybridisation properties of oligonucleotides synthesised <i>in situ</i> ," <i>Nucleic Acids Research</i> , 20(7):1679-1684 (1992).	
<i>SPR</i>	217	McGee, et al., "2'-Amino-2'-deoxyuridine <i>via</i> an Intramolecular Cyclization of a Trichloroacetimidate," <i>J. Org. Chem.</i> , 61:781-785 (1996).	
<i>SPR</i>	218	Meade, T. J., et al., AElectron Transfer through DNA: Site-Specific Modification of Duplex DNA with Ruthenium Donors and Acceptors," <i>Angew Chem. Int. Ed. Engl.</i> , 34:352-354 (1995).	
<i>SPR</i>	219	Meade, T. J., "Driving-Force Effects on the Rate of Long-Range Electron Transfer in Ruthenium-Modified Cytochrome c," <i>J. Am. Chem. Soc.</i> , 111:4353-4356 (1989).	
<i>SPR</i>	220	Mestel, A>Electron Highway= Points to Identity of DNA," <i>New Scientist</i> , p. 21 (1995).	
<i>SPR</i>	221	Millan, K.M. and Mikkelsen, S.R., ASequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators," <i>Anal. Chem.</i> , 65:2317-2323 (1993).	
<i>SPR</i>	222	Millan, K.M., et al., "Covalent Immobilization of DNA onto Glassy Carbon Electrodes," <i>Electroanalysis</i> , 4(10):929-932 (1992).	
<i>SPR</i>	223	Millan, et al., "Voltammetric DNA Biosensor for Cystic Fibrosis Based on a Modified Carbon Paste Electrode," <i>Anal. Chem.</i> , 66:2943-2948 (1994).	
<i>SPR</i>	224	Miller, C., "Absorbed ω-Hydroxy Thiol Monolayers on Gold Electrodes: Evidence for Electron Tunneling to Redox Species in Solution," <i>J. Phys. Chem.</i> , 95:877-886 (1991).	
<i>SPR</i>	225	Mirkin et al., AA DNA-based Method for Ratioally Assembling Nonoparticles into Macroscopic Materials," <i>Nature</i> , 382:607-609 (1996).	
<i>SPR</i>	226	Mirzabekov, A. et al., ADna Sequencing by Hybridization - a Megasequencing Method and a Diagnostic Tool," <i>Tibtech</i> , 12:27-32 (1994).	
<i>SPR</i>	227	Mitchell et al., AProgrammed Assembly of DNA Functionalized Quantum Dots," <i>J. Am. Chem. Soc.</i> , 121:8122-8123 (1999).	

Examiner Signature	<i>Dan Ruff</i>	Date Considered	3/17/04
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SA	229	Murphy, C. J., et al., "Long-Range Photoinduced Electron Transfer Through a DNA Helix," <i>Science</i> , 262:1025-1029 (1993).	
SA	230	Orellana, G., et al., "Photoinduced Electron Transfer Quenching of Excited Ru(II) Polypyridyls Bound to DNA: The Role of the Nucleic Acid Double Helix," <i>Photochemistry and Photobiology</i> , 54(4):499-509 (1991).	
SA	231	Palecek, "From Polarography of DNA to Microanalysis with Nucleic Acid-Modified Electrodes," <i>Electroanalysis</i> , 8(1):7-14 (1996).	
SA	232	Parinov, S., ADNA Sequencing by Hybridization to Microchip octa- and Decanucleotides Extended by Stacked Pentanucleotides, A Nucleic Acids Research, 24(15):2998-3004 (1996).	
SA	233	Paterson, A Electric Genes: Current Flow in DNA Could Lead to Faster Genetic Testing," <i>Scientific American</i> , 33 (May 1995).	
SA	234	Proudnikov, D. AImmobilization of DNA in Polyacrylamide Gel for the manufacture of DNA and DNA-Oligonucleotide Microchips," <i>Analytical Biochemistry</i> , 259:34-41 (1998).	
SA	235	Proudnikov, D. et al., AChemical Methods of DNA and RNA Fluorescent Labeling," <i>Nucleic Acids Research</i> , 24(22):4535-4542 (1996).	
SA	236	Purugganan, M. D., et al., "Accelerated Electron Transfer Between Metal Complexes Mediated by DNA," <i>Science</i> , 241:1645-1649 (1988).	
SA	237	Reimers et al., AToward Efficient Molecular Wires and Switches: the Brooker Ions," <i>Biosystems</i> , 35:107-111 (1995).	
SA	238	Rhodes, D. And A. Klug, AHelical Periodicity of DNA Determined by Enzyme Digestion," <i>Nature</i> , 286:573-578 (1980).	
SA	239	Risser, S. M., et al., "Electron Transfer in DNA: Predictions of Exponential Growth and Decay of Coupling with Donor-Acceptor Distance," <i>J. Am. Chem. Soc.</i> , 115(6):2508-2510 (1993).	
SA	240	Sato, Y., et al., AUnidirectional Electron Transfer at Self-Assembled Monolayers of 11-Ferrocenyl-1-undecanethiol on Gold," <i>Bull. Chem. Soc. Jpn.</i> , 66(4):1032-1037 (1993).	
SA	241	Satyanarayana, S., et al., "Neither Δ- nor Λ-Tris(phenanthroline)ruthenium(II) Binds to DNA by Classical Intercalation," <i>Biochemistry</i> , 31(39):9319-9324 (1992).	
SA	242	Schreiber, et al., "Bis(purine) Complexes of trans-a <sub>2</sub> Pt <sup>II</sup> : Preparation and X-ray Structures of Bis(9-methyladenine) and Mixed 9-Methyladenine, 9-Methylguanine Complexes and Chemistry Relevant to Metal-Modified Nucleobase Triples and Quartets," <i>J. Am. Chem. Soc.</i> 118:4124-4132 (1996).	
SA	243	Schuhmann, W., et al., "Electron Transfer between Glucose Oxidase and Electrodes via Redox Mediators Bound with Flexible Chains to the Enzyme Surface," <i>J. Am. Chem. Soc.</i> , 113:1394-1397 (1991).	

Examiner Signature	<i>David Kelly</i>	Date Considered	3/17/04
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Application Number		09/993,342	
Filing Date		November 05, 2001	
First Named Inventor		BLACKBURN, et al.	
Group Art Unit		1744	
Examiner Name		Not Yet Assigned	
Attorney Docket Number		A-68718-4/RFT/RMS/1700	
Sheet 13	of 15		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
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DA	244	Schumm, et al., "Iterative Divergent/Convergent Approach to Linear Conjugated Oligomers by Successive Doubling of the Molecular Length: A Rapid Route to a 128 □-Long Potential Molecular Wire," <i>Angew. Chem. Int. Ed. Engl.</i> , 33(11):1360-1363 (1994).	
DA	245	Sigal et al., "A Self-Assembled Monolayer for the Binding and Study of Histidine-Tagged Proteins by Surface Plasmon Resonance," <i>Anal. Chem.</i> , 68(3):490-497 (1996).	
DA	246	Sloop et al., "Metalloorganic labels for DNA sequencing and mapping," <i>New. J. Chem.</i> , 18: 317-326 (1994).	
DA	247	Southern, et al., "Arrays of complementary oligonucleotides for analysing the hybridisation behaviour of nucleic acids," <i>Nucleic Acids Research</i> , 22(8):1368-1373 (1994).	
DA	248	Storhoff et al., "A One-Pot Colorimetric Differentiation of Polynucleotides with Single Base Imperfections Using Gold Nanoparticles Probes," <i>J. Am. Chem. Soc.</i> , 120:1959-1964 (1998).	
DA	249	Strobel, S. A., et al., "Site-Specific Cleavage of a Yeast Chromosome by Oligonucleotide-Directed Triple-Helix Formation," <i>Science</i> , 249:73-75 (1990).	
DA	250	Su, et al., "Interfacial Nucleic Acid Hybridization Studied by Random Primer <sup>32</sup> P Labelling and Liquid-Phase Acoustic Network Analysis," <i>Analytical Chemistry</i> , 66(6):769-777 (1994).	
DA	251	Telser, J., et al., "DNA Oligomers and Duplexes Containing a Covalently Attached Derivative of Tris(2,2'-bipyridine)ruthenium(II): Synthesis and Characterization by Thermodynamic and Optical Spectroscopic Measurements," <i>J. Am. Chem. Soc.</i> , 111:7221-7226 (1989).	
DA	252	Telser, J., et al., "DNA Duplexes Covalently Labeled at Two Sites: Synthesis and Characterization by Steady-State and Time-Resolved Optical Spectroscopies," <i>J. Am. Chem. Soc.</i> , 111:7226-7232 (1989).	
DA	253	Timofeev, E. et al., "Regioselective Immobilization of Short Oligonucleotides to Acrylic Copolymer Gel," <i>Nucleic Acids Research</i> , 24(16): 3142-3148 (1996).	
DA	254	Timofeev, E. et al., "Methidium Intercalator Inserted into Synthetic Oligonucleotides," <i>Tetrahedron Letters</i> , 37(47):8467-8470 (1996).	
DA	255	Tour, "Conjugated Macromolecules of Precise Length and Constitution. Organic Synthesis for the Construction of Nanoarchitectures," <i>Chem. Rev.</i> , 96:537-553 (1996).	
DA	256	Tour, et al., "Self-Assembled Monolayers and Multilayers of Conjugated Thiols, α-ω-Dithiols, and Thioacetyl-Containing Adsorbates. Understanding Attachments between Potential Molecular Wires and Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 117:9529-9534 (1995).	
DA	257	Tullius, T.D. and B.A. Dombroski, "Iron(II) EDTA Used to Measure the Helical Twist Along Any DNA Molecule," <i>Science</i> , 230:679-681 (1985).	
DA	258	Turro, N. J., et al., "Molecular Recognition and Chemistry in Restricted Reaction Spaces. Photophysics and Photoinduced Electron Transfer on the Surfaces of Micelles, Dendrimers, and DNA," <i>Acc. Chem. Res.</i> , 24:332-340 (1991).	
Examiner Signature	Daniel Relf		Date Considered 3/17/04

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Sheet 14

of

15

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Application Number 09/993,342

Filing Date November 05, 2001

First Named Inventor BLACKBURN, et al.

Group Art Unit 1744

Examiner Name Not Yet Assigned

Attorney Docket Number A-68718-4/RFT/RMS/

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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<i>DMR</i>	259	Turro, N., et al. "Photoelectron Transfer Between Molecules Adsorbed in Restricted Spaces," <i>Photochem. Convers. Storage Sol. Energy, Proc. Int. Conf., 8th</i> , pp 121-139 (1990).	
<i>DMR</i>	260	Uosake, K., et al., AA Self-Assembled Monolayer of Ferrocenylalkane Thiols on Gold as an Electron Mediator for the Reduction of Fe(III)-EDTA in Solution," <i>Electrochimica Acta.</i> , 36(11/12):1799-1801 (1991).	
<i>DMR</i>	261	Van Ness, J., et al., AA Versatile Solid Support System for Oligodeoxynucleotide Probe-Based Hybridization Assays," <i>Nucleic Acids Research</i> , 19(12):3345-3350 (1991).	
<i>DMR</i>	262	Velev et al., AIn Situ Assembly of Colloidal Particles into Miniaturized Biosensors," <i>The ACS Journal of Surfaces and Colloids</i> , Langmuir, 15(11):3693-3698 (1999).	
<i>DMR</i>	263	Watson et al., AHybrid Nanoparticles with Block Copolymer Shell Structures," <i>J. Am. Chem. Soc.</i> , 121:462-463 (1999).	
<i>DMR</i>	264	Weber, et al., "Voltammetry of Redox-Active Groups Irreversibly Adsorbed onto Electrodes. Treatment Using the Marcus Relation between Rate and Overpotential," <i>Anal. Chem.</i> , 66:3164-3172 (1994).	
<i>DMR</i>	265	Williams, et al., "Studies of oligonucleotide interactions by hybridisation to arrays: the influence of dangling ends on duplex yield," <i>Nucleic Acids Research</i> , 22(8):1365-1367 (1994).	
<i>DMR</i>	266	Winkler, J. R., et al., "Electron Transfer in Ruthenium-Modified Proteins," <i>Chem. Rev.</i> , 92:369-379 (1992).	
<i>DMR</i>	267	Xu, et al., "Immobilization and Hybridization of DNA on an Aluminum(III) Alkanebisphosphonate Thin Film with Electrogenenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 117:2627-2631 (1995).	
<i>DMR</i>	268	Xu, et al., "Immobilization of DNA on an Aluminum(III) alkanebisphosphonate Thin Film with Electrogenenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 116:8386-8387 (1994).	
<i>DMR</i>	269	Yang, et al., "Growth and Characterization of Metal(II) Alkanebisphosphonate Multilayer Thin Films on Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 115:11855-11862 (1993).	
<i>DMR</i>	270	Yershov, G. et al., ADNA Analysis and Diagnostics on Oligonucleotide Microchips," <i>Proc. Natl. Acad. Sci. USA</i> , 93:4913-4918 (1996).	
<i>DMR</i>	271	Zhou, et al., "Fluorescent Chemosensors Based on Energy Migration in Conjugated Polymers: The Molecular Wire Approach to Increased Sensitivity," <i>J. Am. Chem. Soc.</i> , 117:12593-12602 (1995).	
<i>DMR</i>	272	Boon et al., AMutation Detection by Electrocatalysis at DNA- Modified Electrodes," <i>Nature Biotechnology</i> , 18: 1096-1100 (October 2000).	

Examiner Signature	<i>Paul Rely</i>	Date Considered	3/17/04
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Sheet	15	of	15		

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